CLAIMS

What is claimed is:

1.   A programmable fixed priority and round-robin arbiter comprising:

a rotating unit which, when operating in a fixed priority mode or in a round-robin

5   mode, rotates priority information related to bus masters stored in a register in a

direction or rotation to give the highest priority to a bus master in response to pointer

information, and outputs changed priority information;

a request-reordering unit which, when a request signal is received from the bus

masters, reorders requested priorities of the bus masters to be in accordance with the

10   changed priority information and outputs a request-reordering signal;

a request-selecting unit which outputs a bus master-selecting signal according to

priorities in response to the request-reordering signal; and

a grant-reordering unit which outputs a bus master grant signal to the bus

masters according to priorities in response to the bus master-selecting signal.

15

2.   The programmable fixed priority and round-robin arbiter of claim 1,

wherein, when operating in the round-robin mode, the priority information is

programmed such that weight is given to at least one of the bus masters.

20   3.   The programmable fixed priority and round-robin arbiter of claim 1,

wherein the pointer information does not change in the fixed priority mode and

periodically changes in the round-robin mode.

4.   The programmable fixed priority and round-robin arbiter of claim 3,

25   wherein a period of the periodic change is a time period corresponding to when the bus

master grant signal of the highest priority is output.

5.   A bus control method in which an arbiter operating in a fixed priority mode or in a round-robin mode controls a plurality of bus masters, the bus control method comprising:

the arbiter rotating priority information related to bus masters stored in a register to give the highest priority to a bus master in response to pointer information in the fixed priority mode or the round-robin mode, and outputting changed priority information;

at least one of the bus masters transmitting a request signal for occupation of a bus to the arbiter;

the arbiter reordering requested priorities of the bus masters corresponding to the changed priority information and outputting a request-reordering signal;

the arbiter outputting a bus master-selecting signal according to priorities in response to the request-reordering signal; and

the arbiter outputting a bus master grant signal to the bus masters in response to the bus master-selecting signal according to priorities.

6.   The bus control method of claim 5, wherein, when operating in the round-robin mode, the priority information is programmed such that weight is given to at least one of the bus masters.

7.   The bus control method of claim 5, wherein the pointer information does not change in the fixed priority mode and periodically changes in the round-robin mode.

8.   The bus control method of claim 7, wherein a period of the periodic change is the time period corresponding to when the bus master grant signal of the highest priority is output.